

PATENT COOPERATION TREATY

PCT



INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PP04-0103	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/KR2004/000640	International filing date(<i>day/month/year</i>) 24 MARCH 2004 (24.03.2004)	Priority date (<i>day/month/year</i>) 24 MARCH 2003 (24.03.2003)	
International Patent Classification (IPC) or national classification and IPC IPC7 G03F 7/038			
Applicant LG CHEM, LTD et al			

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>3</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>41</u> sheets, as follows:</p> <p style="margin-left: 40px;"><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____ containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>	
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>	

Date of submission of the demand 18 JANUARY 2005 (18.01.2005)	Date of completion of this report 14 JULY 2005 (14.07.2005)
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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/KR2004/000640

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☒ This report is based on translations from the original language into the following language English which is the language of a translation furnished for the purposes of:
 - ☐ international search (under Rules 12.3 and 23.1(b))
 - ☒ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
 - ☐ the international application as originally filed/furnished
 - ☒ the description:
 - pages _____ as originally filed/furnished
 - pages* 1 - 32 received by this Authority on April 14, 2005
 - pages* _____ received by this Authority on _____
 - ☒ the claims:
 - pages _____ as originally filed/furnished
 - pages* 33 - 39 as amended (together with any statement) under Article 19
 - pages* 33 - 39 received by this Authority on April 14, 2005
 - pages* _____ received by this Authority on _____
 - ☐ the drawings:
 - pages _____ as originally filed/furnished
 - pages* _____ received by this Authority on _____
 - pages* _____ received by this Authority on _____
 - ☐ the sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:
 - ☐ the description, pages _____
 - ☐ the claims, Nos. _____
 - ☐ the drawings, sheets _____
 - ☐ the sequence listing (*specify*): _____
 - ☐ any table(s) related to sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 - ☐ the description, pages _____
 - ☐ the claims, Nos. _____
 - ☐ the drawings, sheets _____
 - ☐ the sequence listing (*specify*): _____
 - ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/KR2004/000640

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1 - 17	YES
	Claims		NO
Inventive step (IS)	Claims	1 - 17	YES
	Claims		NO
Industrial applicability (IA)	Claims	1 - 17	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

1. Reference is made to the following documents:

D1: WO 2002/51909 A1

D2: KR2001-27145 A1

D3: JP1999-227099 A

D4: EP 679 633 A1

D5: WO 2000/6453 A1

D6: KR2001-111272 A1

2. Novelty and Inventive Step under Art. 33(2) and (3) PCT

The application describes the polyimide precursor having a structure formula 1 having Y, which is an aliphatic organic group having one or more ethylenically unsaturated bonds that may be crosslinked by a radical especially.

a) D1 - D3 describe the polyimide precursor having a structure formula 1 having Y, which is a aliphatic organic group having not one or more ethylenically unsaturated bonds that may be crosslinked by a radical. Therefore, claim 1 is novel.

b) The application meets the requirements of Art 33 (3) PCT since claim 1 is novel, and claims 2 - 3 which are dependent on claim 1, are also novel. Claim 4 which relates to a method for preparing the polyimide precursor appears to involve an inventive step, because the method is well known to a person skilled in the art, however, but the method of claim 4 is used a novel compound of claim 1.

Claims 5 - 17 which are dependent on claim 4 also involve an inventive step.

3. Industrial Applicability under Art. 33(4) PCT

Claims 1 - 17 meet the criteria set out in PCT Article 33(4), because the claimed invention is directed to polyimide precursor, its synthetic method and a photosensitive composition thereof, which are well known to be useful in industrially applicable assays and are commonly utilized in liquid crystal display devices or semiconductor devices, for example.